TESTIMONY OF JANICE D. HAGER

FOR

DUKE POWER

PSCSC DOCKET NO. 2004-003-E

Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION.

A. My name is Janice D. Hager. My business address is 422 South Church Street, Charlotte, North Carolina. I am Vice President, Rates and Regulatory Affairs for Duke Power, a division of Duke Energy Corporation ("Duke Power" or "the Company").

Q. WHAT ARE YOUR PRESENT RESPONSIBILITIES AT DUKE POWER?

A. I am responsible for all state and federal regulatory operational filings, the design and administration of retail and wholesale rates, load research, and the handling of commission inquiries by customers.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I am a civil engineer, having received a Bachelor of Science in Engineering from the University of North Carolina at Charlotte. I began my career at Duke Power in 1981 and have had a variety of responsibilities across the Company in areas of piping analyses, nuclear station modifications, new generation licensing, Integrated Resource Planning and Demand Side Management. I joined the Rate Department in 1996 and my initial responsibilities included implementation of Duke Power's Open Access Transmission Tariff. I was promoted to Manager, Rate Design, and in 1999, to Manager, Rate Design and Analysis with responsibility for the Rate Design, Revenue Analysis and Load Research groups. In April 2003, I was

promoted to the position of Vice President of Rates and Regulatory Affairs for Duke Power. I am a registered Professional Engineer in North and South Carolina and am vice chair of the Southeastern Electric Exchange Rates and Regulation Section.

Q. ARE YOU FAMILIAR WITH THE ACCOUNTING PROCEDURES AND BOOKS OF ACCOUNT OF DUKE POWER?

A. Yes. As ordered by this Commission, the books of account of Duke Power follow the uniform classification of accounts prescribed by the Federal Energy Regulatory Commission.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to provide the actual fuel cost data for the period April 2003 through March 2004, the historical period under review in this proceeding; the projected fuel cost information for the period April 2004 through May 2005; and the Company's recommended fuel rate for the period June 2004 through May 2005. In addition, I provide an overview of Duke Power and explanations of the seven exhibits attached to my testimony.

Q. YOUR TESTIMONY INCLUDES 7 EXHIBITS. WERE THESE EXHIBITS PREPARED BY YOU OR AT YOUR DIRECTION AND UNDER YOUR SUPERVISION?

A. Yes. Each of these exhibits was prepared at my direction and under my supervision.

Q. PLEASE PROVIDE A DESCRIPTION OF THE EXHIBITS.

A. The exhibits and descriptions are as follows:

Exhibit 1 - Nuclear Plant Performance Data

Exhibit 2 - Nuclear Fuel Purchases and Inventory

Exhibit 3 - Total Company Fuel Costs Detail for the Test Period

Exhibit 4A - Coal Cost per MBTU Burned

Exhibit 4B - Nuclear Cost per MBTU Burned

Exhibit 5 - Source of Generation by Period

Exhibit 6 - Current Period Fuel Costs and Revenues

Exhibit 7 - Projected Period Fuel Costs and Revenues

Q. MS. HAGER, PLEASE PROVIDE A GENERAL DESCRIPTION OF DUKE POWER.

A. Duke Power, which is celebrating its 100th year anniversary this year, serves more than 2 million customers in the Piedmont Carolinas with a service area that covers over 22,000 square miles. The Company operates more than 13,000 miles of transmission lines and almost 100,000 miles of distribution lines. Last year, the Company's system peak demand (single highest hour of use) was 15,594 MWs.

Duke Power's South Carolina retail customers, which represent about 25% of the Company's total customer base, consumed over 20 billion kWhs of electricity last year. Duke Power's South Carolina residential customers consumed 27% of that total, general service customers consumed 25%, and industrial customers consumed 48%.

Q. IS DUKE POWER'S LOAD GROWING?

A. Yes. Duke Power's peak demand and energy use are growing at a rate of about 1.5% per year.

Q. HOW DOES DUKE POWER MEET ITS CUSTOMERS' NEEDS FOR ELECTRICITY?

A. Duke Power meets its customers' needs for electricity through a combination of Company-owned generation, purchases of power from others, and customer

demand-side options. Demand-side options include residential and non-residential programs that provide credits to customers for allowing the Company to curtail their electricity usage on occasion.

Q. MS. HAGER, PLEASE DESCRIBE DUKE POWER'S GENERATION PORTFOLIO.

A. Duke Power's generation portfolio consists of approximately 17,900 MWs of generating capacity, made up as follows:

Nuclear generation -	5,000 MWs (including Duke Power's 12.5% ownership of the Catawba Nuclear Plant)
Coal-fired generation -	7,700 MWs
Hydroelectric -	2,800 MWs
Combustion Turbines -	2,400 MWs

(Combustion turbines can operate on natural gas or fuel oil)

Q. PLEASE PROVIDE A GENERAL DESCRIPTION OF HOW THE DIFFERENT UNITS OPERATE.

A. Duke Power's generating units can be divided into three categories: base load, intermediate and peaking units. Base load units typically have very low operating costs but relatively high initial capital costs to install. Peaking units typically have higher operating costs but lower initial capital costs to install than base load units. Intermediate unit costs are in between the costs for base load and peaking units.

Duke Power's nuclear and large coal units make up its base load fleet. These units run almost continually. The Company's peaking units, combustion turbines, typically operate only on very hot or cold days to meet the short-term high demands our customers place on our systems during those times. Duke Power's intermediate coal units ramp up and down frequently to match the daily variations

in load the Company sees on its system. The Company's hydroelectric units are especially good for meeting rapid changes in load as the output of these units can be changed very quickly.

The base load, intermediate, and peaking nature of units can be demonstrated by looking at the units' capacity factors. Capacity factor is a measure of total kWhs a generating unit provides annually as compared to what it could theoretically provide if it ran every hour of the year at its maximum expected output. Duke Power's nuclear units typically operate at capacity factors above 90%. The Company's largest coal units operate at capacity factors of about 80%. Intermediate units operate at capacity factors in the range of 35 to 80%, and peaking units below 5%.

Q. HOW DOES THE COMPANY DECIDE WHAT TYPE OF GENERATOR TO BUILD?

A. When the Company needs additional capacity, it evaluates the spectrum of available generating technologies and capacity available through purchase power options. The Company selects the option or options that allow the company to meet customer needs in a cost-effective manner. Duke Power considers both initial installation costs and projected operating costs of the generating technology, including fuel costs. For purchased capacity, the Company considers capacity charges and energy charges, including fuel costs.

Q. HOW DOES THE COMPANY DECIDE WHEN TO OPERATE EACH TYPE OF GENERATOR?

A. Each day, the Company selects the combination of company-owned generating units and available purchases that will reliably meet customer needs in the least cost manner. Lower cost units are operated first, with higher cost units added as

load increases. Intraday adjustments are made to reflect changing conditions and purchase opportunities.

Q. PLEASE DESCRIBE HOW PURCHASES OF POWER FROM OTHERS FIT INTO THIS PROCESS.

A. The Company monitors the energy market, evaluating long-term, seasonal, monthly, weekly, daily and hourly purchase opportunities. For example, in making the daily decisions on which resources should be used to meet customer needs, the Company may purchase from others, whether from long-term capacity purchases that the Company has entered into or short-term spot market purchases to ensure it selects the most cost-effective, reliable options.

Q. PLEASE DESCRIBE THE RELATIVE COSTS OF THE VARIOUS FUELS USED BY DUKE POWER FOR ITS GENERATING UNITS.

A. Nuclear fuel is the least costly fuel for the Company with a cost of approximately 0.4 cents/kWh. Coal costs are approximately 1.5 to 2 cents/kWh. While the cost of natural gas and fuel oil are significantly higher, the fuel costs for these fuels is small compared to total fuel costs due to the limited need to call on our combustion turbines. The fuel cost of conventional hydroelectric generation is essentially zero. The cost of pumped storage hydroelectric generation is the fuel cost of the generating unit used to pump the water to the upper reservoir. Hydroelectric operation is limited by the amount of rainfall and water that can be drawn through the units in compliance with the Company's operational licenses.

Q. HOW MUCH OF DUKE POWER'S ENERGY CONSUMED IN THE TEST PERIOD WAS GENERATED BY EACH TYPE OF GENERATING UNIT?

A. During the test period, the energy produced by Duke Power's generation was as follows:

Fossil fuels	52%	
Nuclear	46%	
Hydro	2%	

Q. MS. HAGER, PLEASE DISCUSS THE PERFORMANCE OF THE COMPANY'S NUCLEAR GENERATING SYSTEM DURING THE PERIOD APRIL 2003 THROUGH MARCH 2004.

A. Hager Exhibit 1 sets forth the achieved nuclear capacity factor for the period April 2003 through March 2004 based on the criteria set forth in Section 58-27-865, Code of Laws of South Carolina as amended in 1996. The statute states in pertinent part as follows:

> There shall be a rebuttable presumption that an electrical utility made every reasonable effort to minimize cost associated with the operation of its nuclear generation facility or system, as applicable, if the utility achieved a net capacity factor of ninety-two and one-half percent or higher during the period under review. The calculation of the net capacity factor shall exclude reasonable outage time....

As shown on page 1 of Hager Exhibit 1, Duke Power achieved a net nuclear capacity factor, excluding reasonable outage time, of 102.38% for the current period. This capacity factor is well above the 92.5% set forth in S.C. Code § 58-27-865.

Considering the refueling requirements, maintenance requirements, Nuclear Regulatory Commission (NRC) operating requirements, and the complexity of operating nuclear generating units, the Company's system will almost always have the equivalent of at least one nuclear unit out of service. Pages 2 and 3 of Hager Exhibit 1 show the dates of and explanations for actual and forecast outages of a week or more in duration.

Q. PLEASE DISCUSS THE PERFORMANCE OF DUKE POWER'S FOSSIL GENERATING SYSTEM.

A. Duke Power's fossil generating system consists of coal-fired units and combustion turbines which can burn either natural gas or fuel oil. In the test period, the Company's coal-fired generating plants provided approximately 52% of Duke Power's total generation. In 2003, the heat rate for the coal system was 9,512 BTU/kWh. Heat rate is defined as a measure of the amount of thermal energy needed to generate a given amount of electric energy and is expressed as BTUs per kilowatt-hour (Btu/kwh). A low heat rate indicates an efficient generating system that uses less heat energy from fuel to generate electrical energy. Duke Power has consistently been an industry leader in achieving low heat rates. Duke Power's Marshall Steam Station and Belews Creek Steam Station ranked as the country's third and fourth most energy efficient coal-fired generators in the most recent Electric Light and Power magazine ratings. In addition, the Company has completed the Selective Catalytic Reduction (SCR) project at Belews Creek Steam Station that will enable the plant to reduce its nitrogen oxide emissions by approximately 80 percent.

Duke Power's combustion turbines were available for use as needed but were required to run only infrequently due to the mild weather in the test period.

Q. PLEASE DESCRIBE HOW DUKE POWER INCLUDED FUEL COSTS RELATED TO PURCHASES IN ITS FUEL EXPENSES FOR THE TEST PERIOD.

A. Section 58-27-865(A) of the 1976 Code of Laws of South Carolina, as amended in 1996, was further amended on February 18, 2004 to clarify the definition of fuel costs related to purchased power as follows:

> (A)(1) The words 'fuel cost' as used in this section include the cost of fuel, fuel costs related to purchased power, and the cost of SO2 emission allowances as used and must be reduced by the net proceed of any sales of SO2 emission allowances by the utility.

(2) In order to clarify the intent of this section, 'fuel costs related to purchased power', as used in subsection (A)(1) shall include:

(a) costs of firm generation capacity purchases, which are defined as purchases made to cure a capacity deficiency or to maintain adequate reserve levels; 'costs of firm generation capacity purchases' include the total delivered costs of firm generation capacity purchased and shall exclude generation capacity reservation charges, generation capacity option charges, and any other capacity charges;

(b) the total delivered cost of economy purchases of electric power including, but not limited to, transmission charges; 'economy purchases' are defined as purchases made to displace higher cost generation, at a price which is less than the purchasing utility's avoided variable costs for the generation of an equivalent amount of electric power.

In accordance with the statute, the Company used the avoided cost method to determine the fuel component of purchases of power for Duke Power's native load customers (retail customers and wholesale customers such as municipalities for whom Duke Power supplies generation capacity and energy). Under this methodology, the Company determines the costs it would have incurred in the absence of the purchase. This cost is determined by use of a model that identifies the incremental cost of the unit that would have been dispatched in the absence of the purchase and compares that cost to the cost of the purchase. The incremental cost includes the fuel and certain variable operation and maintenance costs. The Company includes in fuel costs the lower of the cost Duke Power would have incurred or the cost of the energy purchase. Duke Power's customers thereby are ensured of receiving the benefit of purchased power.

Q. MS. HAGER, PLEASE DESCRIBE HOW NUCLEAR COSTS ARE INCLUDED IN THE COMPANY'S FUEL EXPENSES.

A. The cost of each fuel assembly is determined when the fuel is loaded in the reactor. The costs include yellowcake (uranium), conversion, enrichment and fabrication. An estimate of the energy content of each fuel assembly is also made. Nuclear fuel expenses for each month are based on the energy output in units of millions BTUs (MBTUs) of each fuel assembly in the core and Department of Energy 'High Level Waste' and 'Decontamination and Decommissioning Fund' fees. A cost per MBTU is determined by dividing the cost of the assembly by its expected energy output. Each month a calculation of the MBTU output of an assembly is priced at its cost per MBTU.

During the life of a fuel assembly, the expected energy output may change as a result of actual plant operations. When this occurs, changes are made in the cost per MBTU for the remaining energy output of the assembly. New fuel assembly orders are planned for cycle lengths of approximately eighteen months. The length of a cycle is the duration of time between when a unit starts up after refueling and when it starts up after its next refueling. During a refueling outage, approximately one-third of the fuel in the reactor is replaced.

Q MS. HAGER, CAN YOU EXPLAIN HOW COAL COSTS ARE INCLUDED IN THE COMPANY'S FUEL EXPENSES?

A. All of the Company's coal is delivered by rail. As coal is received at each plant, it is weighed and sampled for quality verifications. Subsequently, the purchasing department compares the weight, price and quality with the purchase order and railroad waybill. Purchasing personnel make adjustments to the cost of coal purchased in those cases where the quality of the coal received varies from contract specifications for British Thermal Unit (BTU), ash, and sulfur content.

Duke Power also performs moisture and BTU tests as the coal is delivered to the coal bunkers for each boiler. BTU tests measure the energy content of the coal. To the extent that the moisture content of the coal burned differs from the moisture content of coal purchased, an adjustment is subsequently made to the inventory tonnage. Wet coal weighs more than dry coal and without the moisture adjustment, tons burned would be overstated and inventory would be understated.

Duke Power calculates coal costs charged to fuel expense on an individual plant basis. The expense charge is the product of the tons of coal conveyed to the bunkers for a generating unit during the month multiplied by the average cost of the coal. The number of tons is determined by using scales located on the conveyor belt running to the unit's coal bunkers. The average cost reflects the total cost of coal on hand as of the beginning of the month, computed using the moving average inventory method, plus the cost of coal delivered to the plant during the month. Duke Power determines the cost of coal based upon the invoice for the coal and the freight bill, and does not include any non-fuel cost or coal handling cost at the generating station.

Duke Power conducts annual physical inventories of coal piles through aerial surveys. Duke Power made an adjustment to book inventory for coal in December 2003 based on an aerial survey conducted in November 2003.

Q. WHAT IS SHOWN ON HAGER EXHIBIT 2?

A. Hager Exhibit 2 is a summary of nuclear fuel purchases and inventory, as discussed above. The average price for uranium decreased $1.22 per pound, approximately 10%, due to the expiration of long-term purchase commitments secured at a time when higher market prices prevailed. The exhibit also shows uranium (or uranium equivalents) at the beginning and end of this reporting period. Inventory levels

fluctuate over time due to the number of times nuclear fuel is loaded into the reactors and the uranium requirements of such reloads. Therefore, future uranium inventories at any given point in time may be higher or lower than the current level depending on the associated timing of future reloading requirements.

Q. MS. HAGER, WHAT DOES EXHIBIT 3 SHOW?

A. Hager Exhibit 3 sets forth the total system actual fuel costs (as burned) that the Company incurred from April 2003 through March 2004. This exhibit also shows fuel costs by type of generation and total megawatt hours (MWH) generated during this period. The monthly fluctuations in total fuel cost during this period are primarily due to refueling and other outages at the nuclear stations, weather sensitive sales and the availability of hydroelectric generation.

Q. MS. HAGER, WHAT IS THE MAGNITUDE OF THE COMPANY'S FUEL COST COMPARED TO THE TOTAL COST OF SERVICE?

A. Fuel costs continue to be the largest cost item Duke Power incurs in providing electric service. For the twelve months ended February 2004, fuel and the fuel component of purchased power represented approximately 19% of the Company's total revenue. Of fuel costs, coal costs are the largest component and during the period April 2003 through March 2004 comprised approximately 76% of the costs of the Company's fuel burned.

Q. MS. HAGER, WHAT CHANGES HAVE OCURRED IN THE UNIT COST OF FUEL DURING RECENT REPORTING PERIODS?

A. Hager Exhibits 4A and 4B graphically portray the "as burned" cost of both coal and nuclear fuel in cents per MBTU for the twelve month periods ending January 2002 through March 2004. As Exhibit 4A shows, coal costs increased during the period as testified to by Witness Batson. Exhibit 4B shows that nuclear fuel costs have

been flat. The costs incurred by Duke Power for the other fossil fuels used by the Company, natural gas and fuel oil, are a very small percentage of the total fuel costs. The costs incurred during the test period for these fuels were approximately $12 million, or 1% of the Company's total fuel expense for the year.

Duke Power expects its composite cost of fuel to increase. While the unit costs of nuclear fuel have shown little volatility in the recent past, the Company's future KWH growth will be met primarily from the Company's coal generating units, and the cost of coal, which is about three times the cost of nuclear fuel, appears to be on an upward trend.

Q. MS. HAGER, WHAT DOES HAGER EXHIBIT 5 SHOW?

A. Hager Exhibit 5 graphically shows generation by type for the current and projected periods as well as three prior periods. As the Exhibit demonstrates, nuclear and fossil fuel expenses account for approximately 99% of the Company's total fuel expenses.

Q. MS. HAGER, DO YOU BELIEVE THE COMPANY'S ACTUAL FUEL COSTS INCURRED DURING THE PERIOD APRIL 2003 THROUGH MARCH 2004 WERE REASONABLE?

A. Yes. I believe the costs are reasonable and that Duke Power has demonstrated that it meets the criteria set forth in Section 58-27-865(F) of the Code of Laws of South Carolina. These costs also reflect the Company's continuing efforts to maintain reliable service and an economical generation mix, thereby minimizing the total cost of providing service to our South Carolina retail customers.

Q. WHAT HAS BEEN THE COMPANY'S FUEL RECOVERY EXPERIENCE DURING THE PERIOD APRIL 2003 THROUGH MARCH 2004?

A. Hager Exhibit 6 shows the actual fuel costs incurred for the period April 2003 through March 2004, the estimated fuel costs for April 2004 and May 2004 and the under-recovery carried forward at the beginning of the period. This exhibit compares the fuel costs incurred with the revenues collected applying the applicable fuel rate of 0.9500¢/KWH for the period April 2003 and May 2003 and 1.150¢/KWH for the remainder of the period. The Company started the period under-recovered by $997,000 as shown on line 12. As shown on line 13, the Company is projecting an over-recovery at the end of the current billing period of $6,502,000.

Q. HAS DUKE POWER ENTERED INTO A STIPULATION WITH THE CONSUMER ADVOCATE FOR THE STATE OF SOUTH CAROLINA; ("CONSUMER ADVOCATE") TO RESOLVE THE PENDING ISSUES IN DOCKET NOS. 2002-3-E and 2003-3-E?

A. Yes. Duke Power and the Consumer Advocate entered into a stipulation dated April 20, 2004 in settlement of the pending issues in Docket Nos. 2002-3-E and 2003-3-E whereby Duke Power agreed to and has reduced its recovery through the fuel factor by $500,000 ("Stipulation"). The parties filed the Stipulation for Commission approval in Docket Nos. 2002-3-E and 2003-3-E on April 20, 2004. The Stipulation, including Exhibit A thereto, is incorporated herein by reference.

Q. WHAT IMPACT HAS THE STIPULATION HAD ON THE COMPANY'S TEST PERIOD OVER RECOVERY?

A. The Commission in its annual orders approving base rates for fuel costs for Duke Power entered in Docket Nos. 2002-3-E and 2003-3-E, approved a recovery through Duke Power's fuel clause for the full cost of the Company's economy purchases of power provided that the cost of such purchases were less than the

cost Duke Power was able to avoid by making each of the purchases rather than operating one of its own generating units ("avoided cost methodology"). In June 2002, pursuant to the Commission's Order Nos. 2002-401 and 2002-516 in Docket No. 2002-3-E, Duke Power booked a journal entry for $566,033 to reflect the difference between what Duke Power had previously booked for fuel expense related to purchased power for the period April 2001 through March 2002 and the amount permitted under the avoided cost methodology for recovery of the fuel cost in economy purchases ("economic purchase adjustment"). The Consumer Advocate appealed the Commission's approval of the avoided cost methodology in Docket No. 2002-3-E. The parties also agreed to apply the final resolution of the Consumer Advocate's appeal to the same issues pending in Docket No. 2003-3-E. In January 2004, as a result of the Circuit Court's decision on appeal reversing the Commission, Duke Power booked a December 2003 journal entry for ($566,033) to reverse the June 2002 entry pending any further appeal of this issue. The effect of this entry is shown on Exhibit 6, line 12 for December 2003 in the amount of ($564,000), which constitutes the reversal of the economic purchase adjustment prior to the application of the constant tax factor. The impact of this entry on Duke Power's recovery of fuel expenses for the test year is also shown on Exhibit A to the Stipulation. As set forth in the Stipulation, Duke Power and the Consumer Advocate have agreed that this reduction shall settle all matters raised by the Consumer Advocate in Docket Nos. 2002-3-E and 2003-3-E.

Q. MS. HAGER, WHAT IS THE COST OF FUEL THE COMPANY PROJECTS FOR RECOVERY DURING THE PERIOD JUNE 2004 THROUGH MAY 2005?

A. Hager Exhibit 7 sets forth projected fuel costs for the period June 2004 through May 2005. As shown on line 7, the fuel cost estimated for recovery during this

period is 1.3187¢/KWH. After adjusting for the cumulative over-recovery, the adjusted fuel cost is 1.2878¢/KWH.

Q. WHAT IS THE BASIS FOR ESTIMATING FUEL COSTS AS SHOWN ON HAGER EXHIBIT 7?

A. Duke Power developed the projections shown on Hager Exhibit 7 based on the latest information available to the Company. The projected kWh sales on line 6 are from the Company's 2004 sales forecast. Projected nuclear generation reflects planned outages, which include refueling outages at four units and outages at two Oconee units to replace the steam generators as well as to refuel the units. The projection of fuel costs are based on a 97% capacity factor for the nuclear units while they are running. The Company's most recent nuclear fuel cost estimate was used to determine projected nuclear fuel expense. Estimated hydroelectric generation for the period is based on median generation for the period 1973 - 2003. The Company estimates fuel costs of energy purchases based on historical purchase quantities and price. Oil and gas fuel costs and generation are based on a three year average. The Company assumes that the remainder of the customers' energy needs are served from coal-fired units. The projected price for coal contracts is based on the price of coal contracts that will be in place during the projection period along with the current market price for coal needs beyond the currently contracted amounts.

Q. MS. HAGER, WHAT FUEL FACTOR IS THE COMPANY PROPOSING FOR INCLUSION IN BASE RATES EFFECTIVE JUNE 1, 2004?

A. The Company proposes that the fuel factor of 1.150¢/KWH currently included in base rates remain the same for the period June 1, 2004 through May 31, 2005. Based on our estimate, this fuel factor would result in the Company under-

recovering its fuel cost at the end of the period by approximately $29,050,000. Continuing use of the current fuel factor balances out over/under-recoveries of fuel costs over time and is in keeping with the spirit of the statute which allows utilities to recover prudently incurred fuel costs "in a manner that tends to ensure public confidence and minimize abrupt changes in charges to consumers."

Q. MS. HAGER, DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes, it does.